CLASSIFICATION CONFIDENTIAL CONFIDENTIAL

CENTRAL INTELLIGENCE AGENCY
INFORMATION FROM
FOREIGN DOCUMENTS OR RADIO BROADCASTS

REPORT

CD NO.

50X1-HUM

COUNTRY	USSR	DATE OF INFORMATION	1950
SUBJECT	Scientific - Chemical, electrochemistry	DATE DIST.	16 Aug 1950
HOW PUBLISHED	Bimonthly periodical		
WHERE PUBLISHED	Moscow	NO. OF PAGES	3
DATE PUBLISHED	Mar/Apr 1950	SUPPLEMENT TO REPORT NO.	
LANGUAGE	Russian		

THIS IS UNEVALUATED INFORMATION

SOURCE Zhurnal Analiticheskoy Khimii, Vol V, No 2, 1950.

RESOLUTIONS OF THE CONFERENCE ON ELECTROCHEMICAL METHODS OF ANALYSIS

Discussions of reports presented at the Conference convened 10-12 January 1950 in Moscow by the Commission of Analytical Chemistry of the Department of Chemical Sciences, Academy of Sciences USSR, revealed that work on electrochemical methods of analysis has achieved extensive development and has produced valuable results in both practical and theoretical realms.

In the practical sphere should be noted the successful application of electrochemical methods of analysis, particularly methods based on polarography, which are used in the metallurgical and chemical industries, in machine construction, and in problems related to the study of mineral resources. Soviet investigations concerning the theory of the polarographic maximum have had wide analytical application.

Investigations on electrochemical methods of analyzing nonaquebus solutions, on the theory of the amalgam drop electrode, work on the selective extraction of metals from amalgams, on the use of a solid platinum electrode, on the polarography of organic compounds, and on the effect of the medium on oxidation-reduction potentials also deserve attention. Noteworthy as well are the contributions to the theory and practical application of electrochemical catalysis by workers of peripheral scientific centers such as Kiev, Khar'kov, Gor'kiy, Rostov, Sverdlovsk, Alma-Ata, etc.

Considerable achievements were made, too, in the construction and, in some cases, in increasing the production of electrochemical appliances (in particular, the visual polarographs of the Gor'kiy Institute of Chemistry, the State Scientific-Research Institute of Nonferrous Metals (Gintsvetmet), and the Institute of Chemistry and Metallurgy of the Ural Affiliate of the Academy of Sciences USSR).

However, the conference noted insufficient development in a number of fields of electrochemical methods of analysis such as classical gravimetric electroanalysis, potentiometry, and conductometry, all of which play an essential role in improving the efficiency of chemical analysis.

The conference recommended the amplification of work in these fields in the institutes of the Academy of Sciences USSR, in branch institutes, in higher educational institutions, etc.

CLASSIFICATION CONFIDENTIAL

STATE	X	NAVY	X	NSRB	DISTRIBUTION
ARMY	X	AIR	X	FBI	

CONFIDENTIAL

With an eye to the long-range development of electrochemical methods of analysis on a level required by Soviet science and industry, the conference felt it necessary to recommend the following measures:

1. Development of Electrochemical Methods of Analysis

a. Development of theoretical work in classical polarography.

b. Development of theoretical bases for the use of solid (particularly platinum) electrodes in amperometry and polarography.

c. Future development of work in the polarography of organic compounds in order to investigate the chemistry of oxidation-reduction processes.

d. Development of work based on electroosmosis and electrodialysis.

e. Development of work based on the differences in Hittorf numbers and mobilities for the purpose of separating various ions and isotopes.

f. Development of theoretical and practical foundations for electrochemical methods of analysis of maximally diluted solutions with the use of radioactive indicators (control of the completeness of precipitation during electrodialysis, etc.).

g. Development of work on the electrochemical analysis in nonaqueous mediums, especially in clarifying the concept of pH at various temperatures and also of nonaqueous solutions and melted solids.

h. Utilization of electrochemical methods for solving general problems in analytical chemistry: the diversity of substances, constants of instability, complex compounds and their structure, constants of acidity, kinetics of reduction processes, coefficients of diffusion, etc.

i. Intensification of work on the production and practical use of new buffer solutions.

j. Planning and development of work with the amalgam-drop electrode, and research on the selective extraction of metals from amalgams.

2. Personnel Training

a. To request the Ministry of Higher Education to give consideration to the training of chemists working in the field of electrochemical methods of analysis through the introduction of special courses in analytical chemistry.

b. To point out to the Department of Chemical Sciences, Academy of Sciences USSR, and also to the scientific-technical main administrations of the ministries the necessity for organizing courses to raise the qualifications of persons working in the field of electrochemical methods of analysis.

c. To request the Presidium of the Academy of Sciences USSR to enlarge research groups in the affiliates of the Academy of Sciences USSR and to increase the number of workers specializing in the field of electrochemical methods of analysis in the plant laboratories.

3. Production of Apparatus and Reagents

a. To point out to the Ministry of Machine and Instrument Building that the production of several instruments (for example, the polarograph) is inferior.

CONFIDENTIAL

b. To request the Ministry of Machine and Instrument Building to assure a regular output of electrochemical instruments of the quantity and quality required (potentiometers, pH-meters, instruments for conductometric analysis, vacuum-tube potentiometers, DC cathode voltmeters, electrical measuring instruments with high sensitivity, etc.).

c. To request the Ministries of Machine and Instrument Building and of the Chemical Industry to increase the output and organize the production of parts used in electrochemical analysis (glass electrodes, especially those containing oxides of rare-earth metals, tubes for the drop electrode, drop semielements, normal elements, etc.).

d. To request the Ministry of the Chemical Industry to increase the production of reagents necessary for electrochemical analysis.

e. To call to the attention of the construction departments of the scientific-research institutes the necessity for organization of work in the construction of instruments to be used with cathode oscillographs and amperographs, and for further improvement of existing apparatus.

4. Literature and Dissemination of New Experimental Knowledge

In view of the insufficient coverage of problems connected with methods and the construction of apparatus in current periodical literature, the conference resolved:

a. To request the Editorial-Publishing Council of the Academy of Sciences USSR to increase the number of issues of Zhurnal Analiticheskoy Khimii to 12 per year instead of the present six.

b. To request the Commission on Analytical Chemistry, Department of Chemical Sciences, Academy of Sciences USSR, to publish through Goskhimizdat (State Chemical Publishing House) special courses and handbooks on polarography and other electrochemical methods of analysis in which the progress made by Soviet researchers can be presented.

c. To request Metallurgizdat (Metallurgical Publishing House) to increase the size of its periodical Zavodskaya Laboratoriya so that more original and critical studies in electrochemical methods of analysis can be included.

d. To request the editorial board of Zhurnal Analiticheskoy Khimii to increase the volume of its critical studies.

e. To request the Commission on Analytical Chemistry to attract outside workers through the organization at institutes of seminars on the problems of electrochemical analyses, and also to keep workers of peripheral institutes and laboratories informed as to the progress and content of this work.

f. To request the Editorial-Publishing Council of the Academy of Sciences USSR to publish the "Transactions" (Trudy) of the conference in 1950.

- E N D -